

WHAT IS CLAIMED IS:

- 1 1. A method of modeling a combinatorial gate comprising:
2 providing a data signal input at the combinatorial gate;
3 providing a clock signal input at the combinatorial gate; and,
4 propagating the clock signal as an output signal when the output of the
5 combinatorial gate corresponds to the clock signal; and,
6 propagating the data signal as an output when the output of the combinatorial
7 gate corresponds to the data signal, the propagating the data signal
8 modeling a near domino function.

- 1 2. The method of claim 1 wherein:
2 the near domino function is propagated based upon performing a reverse
3 traversal function on a circuit design containing the combinatorial gate.

- 1 3. The method of claim 1 wherein:
2 the near domino function includes causing a later arriving edge of the data
3 signal to cause the output signal to respond.

- 1 4. The method of claim 1 wherein:
2 the data signal includes a single edge per clock period; and,
3 when providing the near domino function, the single edge is propagated
4 through the combinatorial gate.

- 1 5. The method of claim 1 wherein:
2 the clock signal includes two edges per clock period; and,
3 when propagating the clock signal, the two edges are propagated through the
4 combinatorial gate.

1 6. A method of determining how to model a combinatorial gate where the
2 combinatorial gate receives a data signal and a clock signal comprising:
3 performing a reverse traversal function on a circuit containing the
4 combinatorial gate,
5 modeling an output of the combinatorial gate as the clock signal when an input
6 to a next element of the circuit is a clock; and,
7 modeling the output of the combinatorial gate as a data signal when an input to
8 a next element of the circuit is a data signal.

9 7. The method of claim 6 wherein:
10 the modeling the output of the combinatorial gate as a data signal includes a
11 near domino function.

1 8. The method of claim 7 wherein:
2 the near domino function includes causing a later arriving edge of the data
3 signal to cause the output signal to respond.

1 9. The method of claim 7 wherein:
2 the data signal includes a single edge per clock period; and,
3 when providing the near domino function, the single edge is propagated
4 through the combinatorial gate.

1 10. The method of claim 7 wherein:
2 the clock signal includes two edges per clock period; and,
3 when propagating the clock signal, the two edges are propagated through the
4 combinatorial gate.

- 1 11. A method of modeling a combinatorial gate within a static timing
2 analysis comprising:
3 receiving a data signal at the combinatorial gate;
4 receiving a clock signal at the combinatorial gate; and,
5 providing an output corresponding to the clock signal when the output of the
6 combinatorial gate corresponds to the clock signal; and,
7 providing an output having a near domino function when the output of the
8 combinatorial gate corresponds to the data signal.
- 1 12. The method of claim 11 wherein:
2 the near domino function is provided based upon performing a reverse
3 traversal function on a circuit design containing the combinatorial gate.
- 1 13. The method of claim 11 wherein:
2 the near domino function includes causing a later arriving edge of the data
3 signal to cause the output signal to respond.
- 1 14. The method of claim 11 wherein:
2 the data signal includes a single edge per clock period; and,
3 when providing the near domino function, the single edge is propagated
4 through the combinatorial gate.
- 1 15. The method of claim 11 wherein:
2 the clock signal includes two edges per clock period; and,
3 when providing the clock signal as the output, the two edges are propagated
4 through the combinatorial gate.

1 16. A static timing engine comprising:
 2 a data model, the data model including a combinational block determinator
 3 module, the combinational block determinator module including
 4 means for performing a reverse traversal function on a circuit
 5 containing the combinatorial gate, and
 6 a timing engine portion coupled to the data model, the timing engine portion
 7 including
 8 means for modeling an output of the combinatorial gate as a clock
 9 signal when an input to a next element of the circuit is clock
 10 input; and,
 11 means for modeling the output of the combinatorial gate as a data
 12 signal when an input to a next element of the circuit is a data
 13 input.

1 17. The static timing engine of claim 16 wherein:
 2 the means for modeling the output of the combinatorial gate as a data signal
 3 includes means for modeling a near domino function.

1 18. The static timing engine of claim 17 wherein:
 2 the near domino function includes causing a later arriving edge of the data
 3 signal to cause the output signal to respond.

1 19. The static timing engine of claim 17 wherein:
 2 the data signal includes a single edge per clock period; and,
 3 when providing the near domino function, the single edge is propagated
 4 through the combinatorial gate.

1 20. The static timing engine of claim 17 wherein:
 2 the clock signal includes two edges per clock period; and,
 3 when propagating the clock signal, the two edges are propagated through the
 4 combinatorial gate.